Listing of Claims

The below listing of claims will replace all prior versions of claims in the application.

1. (Currently Amended) A method for determining a number of a frame in a sequence of two or more frames, the method comprising:

receiving a sequence of at least M+1 consecutive OFDM frames, each frame having an index m, having a designated preamble ~~and having~~ wherein the designated preamble has a selected length N1 and an associated pseudo-noise signal PN(t;m) (m = 0, ... , M; M≥1);

providing an overlap function OF(m;k) of the designated preambles with each of a sequence of selected reference signals, indexed by k = 1, 2, ... , K where K is a selected integer, and determining a phase $\phi(m)$ corresponding to a location of a maximum amplitude of the overlap functions OF(m;k) for each of the M+1 designated preambles of the sequence of at least M+1 consecutive OFDM frames;

forming a selected ~~Mth order~~ pth order phase difference of the phases $\phi(m)$; and

comparing the ~~Mth order~~ pth order difference with a selected table of ~~Mth order~~ pth order phase differences to determine a frame number of at least one frame of the M+1 consecutive OFDM frames, the frame number uniquely identifying the at least one frame in the M+1 consecutive OFDM frames.

2. (Currently Amended) The method of claim 1, further comprising ~~choosing M = 1~~ choosing p = 1 and choosing said first-order phase difference to be $\Delta_1(m) = \phi(m+1) - \phi(m)$.

3. (Currently Amended) The method of claim 1, further comprising ~~choosing M = 3~~ choosing p = 3 and choosing said ~~first-order~~ third-order phase difference to be $\Delta_3(m) = \phi(m+3) - 3\phi(m+2) + 3\phi(m+1) - \phi(m)$.

4. (Currently Amended) The method of claim 1, further comprising ~~choosing M~~ choosing p to be an odd integer.

5. (Original) The method of claim 1, further comprising forming a linear combination

$$LC(m) = \sum^{P} c(p)\cdot\Delta_p(m) \qquad (P\geq 2),$$

$$p=1$$

where c(p) are selected coefficients, at least one of which is non-zero; and

comparing the linear combination value LC(m) with a selected table of linear combination values to determine a frame number of at least one of the M+1 frames.

6. (Original) The method of claim 1, further comprising providing at least two of said pseudo-noise signals, PN(t;m1) and PN(t;m2), as translations of each other through a relation PN(t;m2) = PN(t + Δt(m1,m2);m1), where Δt(m1,m2) is a selected time difference depending upon at least one of said indices m1 and m2.

7. (Original) The method of claim 1, further comprising:

computing a first order sum $\sum_1(m) = \phi(m+1) + \phi(m)$ for at least one index number m; and

when the sum $\sum_1(m)$ is not equal to at least one of the numbers +1 and -1, adjusting a value of at least said phases $\phi(m)$ and $\phi(m+1)$ so that the sum $\sum 1(m)$ is equal to one of the numbers +1 and -1.

8. (Original) The method of claim 1, further comprising choosing at least one of said selected reference signals to be an m-sequence.

Claims 9-16: (Cancelled).